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ABSTRACT

Information about small farms is valuable at federal, state, and local levels to program managers and community developers, researchers and educators, policy makers and farm families themselves. Adequate information can help in the assessment of small farm program needs, development of appropriate policies, and management of effective programs, thereby aiding the well-being of the small farm family and its role in agriculture as a whole. Research activity regarding small farms has increased in the 1970's and has included more reports, extension education directed to small farm families, legislation, small farm research agenda studies and workshops, activities of small farm advocates, and other initiatives of the United States Department of Agriculture. Future policy formation and program management requires information in seven main categories: small farm definition and criteria; the goals and goal achievement of small farmers; their problems and disadvantaged circumstances; available human resources; available farm resources; community institutions; and the family's current use of available resources to achieve its goals and solve its problems. No national or state-wide secondary data source adequately includes all this information. (Author/SB)

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INFORMATION NEEDS RELATING TO SMALL-FARM PROGRAMS AND POLICIES

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for

Economic Development Division

Economics, Statistics, and Cooperatives Service
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Washington, D.C. 20250

ESCS Staff Report
July, 1980

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INFORMATION NEEDS RELATING TO SMALL-FARM PROGRAMS AND POLICIES. William E. Saupe. Economic Development Division, Economics, Statistics, and Cooperatives Service, U.S. Department of Agriculture, Washington, D.C. 20250, July 19, 1980.

SUMMARY

This report identifies information that is needed about small-farm families in order to develop policies and manage programs on their behalf. Small-farm research, extension, and advocate activities were reviewed and small-farm issues discussed with persons associated with the government.

The information needed about small-farm families included the following clusters: small-farm criteria and definitions, goals and goal achievement, problems and disadvantaged circumstances, human resources, farm resources, community institutions, and the current use of resources to solve problems. No national or state-wide secondary data sources adequately included all of the above.

KEYWORDS: Small-farms, limited resource farmers, Small-farm research, Farm policy, Farm poverty.

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*This report was prepared for limited distribution to the research and exten- *
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CONTENTS

	Page
SUMMARY	1
CONTENTS	ii
INTRODUCTION	1
SMALL-FARM DEFINITIONS	1
The USDA Small-Farm Definition	1
Structure of Agriculture and Small-Farms	2
Poverty-Level Farms	2
Other Small-Farm Definitions	3
ISSUES AND CONCEPTS	3
Users of Small-Farm Information	4
Goals, Problems and Well Being of Small-Farm Families	5
REVIEW OF SMALL-FARM RESEARCH AND ACTIVITIES	6
Small-Farm Research Agenda Studies	7
ESCS Small-Farms Workshop	7
North Central Regional Center for Rural Development	8
National Rural Center Small-Farms Project	8
Regional Small-Farms Conferences	9
Farmers Home Administration Research Program	10
Research and Extension Needs of Small Farmers	10
Research and Reports About Small-Farm Families	11
Description and Analyses of Small-Farms	11
Small-Farms and Rural Development	13
Welfare Programs and Small-Farms	15
Extension Education for Small-Farms	16
Small-Farm Advocates	17
Small-Farm Legislation	19
Other Small-Farm Initiatives in the USDA	20
INFORMATION NEEDED ABOUT SMALL-FARM FAMILIES	22
Small-Farm Criteria and Definitions	23
Goals and Goal Achievement	24
Problems and Disadvantaged Circumstances	24
Human Resources	24
Farm Resources	25
Community and Institutional Resources	25
Using Resources to Solve Problems	25
Secondary Data Sources	26
LITERATURE CITED	31

INFORMATION NEEDS RELATING TO SMALL-FARM PROGRAMS AND POLICIES

William E. Saupe*

INTRODUCTION

The purpose of this report is to identify information about small-farm families that is needed in order to effectively develop and manage appropriate programs and policies on their behalf. The well-being of the farm family is the key issue.

The first two sections of this report deal with definitions, issues, and a conceptual basis for identifying information needs. This is followed by a review of small-farm research, programs, and activities. The information that is needed about small farms is reported in the next section, and in the final section, the outline of a small-farm research plan is reported.

The exclusion of many small-farm families from the current agricultural abundance has heightened concern for their well-being. The downward trend in the number of farm persons in poverty ended, and 1.3 million lived in poverty in the USA late in the seventies (20). 1/ A variety of reasons for interest in the problem can be cited, including:

a) humanitarian concern for any disadvantaged person,
b) disutility in being aware that there are poor persons,
c) transfers received by low-income families must be paid for by taxpayers and
d) underutilization of resources on small farms results in lower than possible total production and income in our economy.

The deprivation that low income entails for the persons involved and its presence in all farming areas of the country make this a farm issue of national concern.

SMALL-FARM DEFINITIONS

There are many definitions and concepts of "small-farms" in the United States. Often, how small farms are defined can give valuable clues about what are perceived to be the main problems and issues. In this report, the family on the farm is the unit of interest and their economic and social well-being is the central concern, i.e., small-farm families are perceived to be low-income farm families.

The USDA Small-Farm Definition

The small-farm definition adopted by the U.S. Department of Agriculture (USDA) in 1979 is used here. This definition includes all farm families:

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1/ Underscored number in parentheses refer to references listed at the end of this report.

a) whose family net income from all sources (farm and nonfarm) is below the median nonmetropolitan income of the State,
b) who depend on farming for a significant though not necessarily a majority of their income, and
c) whose members provide most of the labor and management (11).

This is a useful definition because it focuses on a relatively homogeneous subgroup of farm families with the common problem of low income and for whom farming is an important economic activity of the family members (7). Similar concepts are found in the guidelines used by the State of California's Small-Farm Viability Project (49) and in the National Rural Center's workshops directed toward building a Federal policy for small-farms (53).

Notably, the USDA definition departs from the tradition of the Food and Agricultural Act passed by Congress in 1977, which aggregates farms on the basis of annual sales. By categorizing farms with annual sales of agricultural products amounting to less than $20,000 as "small," the Act lumped together two-thirds of all farmers, a heterogeneous mass with little in common regarding farm resources, activities, or problems (39,37).

Structure of Agriculture and Small Farms

While the current national dialogue on farm structure often refers to the "family farm" or the "small farm," the structure of agriculture pertains to issues other than the well-being of low-income farm families (97,95). While analyzing the structure of agriculture does involve describing the number and size of farms, it also requires examination of agricultural resources and product mix, farm input and product markets, and the ownership and supply of farm resources. The current concern with structure is focused on the impact of Federal farm commodity programs, taxes, credit, regulation, and agricultural research and education on the numbers and viability of family farms. Structure is also affected by changes in relative prices and the adoption of cost-reducing technology. The underlying interest of researchers in this area is the distribution of agricultural resources and production control among large numbers of independent producers. The focus of the discussion on structure is on the farm sector as an export earner, the family farms' ability to continue production in times of economic adversity, the decline of the rural socioeconomic infrastructure, and control of production and marketing, rather than the well-being of low-income farmers. Analyses that preceded the current dialogue on structure were prepared by Mayer (44), Raup (61,62), Emerson (21), and the General Accounting Office (25).

Poverty Level Farms

Poverty level income has sometimes been used as a criterion to identify the most seriously disadvantaged farm families; that is, families who are small in terms of total income. The Federal poverty level income thresholds are important benchmarks and useful in many analyses, but it is noted that additional factors may be important to the well-being of small-farm families. Nevertheless, poverty income thresholds do provide a single unambiguous income criterion against which to compare observed family income, are based on a simple concept, and poverty statistics are published annually (103). The poverty threshold is calculated for a family of given size, age of head, sex of head, and farm or nonfarm place of residence as the cost of a minimal food budget multiplied by three, and reflects the lowest family living budget that society considers acceptable. Comparisons may be made among families by calculating for each the ratio of observed income to its minimal family living budget. For example, families with equal ratios can be considered to be equally well off, and comparisons can be made among families of different sizes, locations, etc. The use of the

poverty criteria implies that level of income by itself adequately measures family well-being in contrast to the general belief that the concept of well-being is more complex. In addition, the poverty criteria only identify the most seriously disadvantaged persons, while there are many others with serious economic problems.

Other Small-Farm Definitions

In addition to the definitions just mentioned, additional diversity in small-farm definitions has emerged during this decade (79). Two recent changes in rural areas have contributed to the emergence of this variety of small-farm concepts.

The first change was the reversal in the 50-year trend in rural-to-urban migration. First documented in comparisons of 1973 and 1970 national data, the larger net population growth in rural compared with metropolitan counties has now affected all States (4). Migration to rural areas by retired persons, the increase in rural employment opportunities, and growing popularity of rural lifestyles has increased the number of rural residents who are perceived to be small farmers by some criteria. Second, there has been an increase in part-time and full-time off-farm employment by heads and spouses of farm families (36) to the extent that aggregated nonfarm income now has exceeded net farm income of farm families in 8 of the last 10 years (93). This mixture of income sources contributes to the difficulty of distinguishing which rural residents are farmers.

A useful scheme for disaggregating this heterogeneous small-farm population can be found in an article by W. Wood (110). Using the objectives of the farm family as the criterion, his category containing the largest number of families is the limited resource farm families who consistently fail to generate adequate family income. Second, he identifies large numbers of families that operate small-farms and have taken on nonfarm work for an adequate total income, plus rural residents with urban jobs who have taken up farming as a device to increase income or net worth. He notes that hobby farming can be a way for conversion of ordinary income to capital gains and has become more general in both appeal and access. Next, the small farm may be viewed principally as a rural residence with amenities for family living for persons whose objective is a rural life style. A relatively new type of small farmer is the family unit that indicates that economic survival is the objective, but without particular attention to income. Their purpose is not to maximize income, but merely to cover simple family needs. Wood notes a counter-culture category of small farms with a small cadre of serious efforts at communes and other economic and social experiments, partly as a protest against present economic and social institutions and partly as an effort to seek other alternatives. There is some producer and consumer support that organic farming and production processes lend themselves to the small-farm category, based on a belief that small-farm families provide an opportunity for the application of organic farming, energy-saving technology, or enhanced soil and water conserving practices. Wood's final category, frequently ignored in discussions of small-farms, is the currently functioning family farm operation which seeks to provide family income while remaining sufficiently small to permit management of resources without either increased risk of capital or the possibility of exceeding managerial capabilities.

ISSUES AND CONCEPTS

Small-farm issues are diverse and complex, reflecting the wide range of exposure to and perceptions of "small farmers" by agricultural researchers, educators, Congressional staff members, rural advocates and farmers themselves. Differences in motivation, perspective, and experience have led to a wide variety of opinions regarding the circumstances, problems, and options of small farmers.

Two major small-farm issues were identified in the preceding discussion of definitions:

a) the well-being of families living on small farms, and
b) the role of small-farms in the structure of agriculture, i.e., their domination in terms of numbers but their limited control of total farm production (85).

Other issues include:

c) whether or not small farms are more efficient than larger producers in terms of energy and other resource costs, or if they are less efficient and therefore contribute to the concentration of producing among the relatively fewer, larger farms.
d) the possibility that small farms are especially well suited to the production of farm goods with organic processes or in ways that enhance the quality and purity of food, and e) the opportunities offered by small farms for soil protection and natural resource conservation.
e) the opportunities offered by small farms for soil protection and natural resource conservation.

Additional important viewpoints to be considered are:

f) that the rural life style is preferable to urban and should be protected as democracy and our political structure are better served if our system contains a large number of self-employed farmers,
g) that public assistance toward self-employment on farms has lower social and tax costs than being on welfare in cities, and related to that,
h) low-income farm families are inequitably served by Federal income transfers and welfare programs relative to equally disadvantaged urban people.

Finally, small-farm issues include the question of whether there should be public sector intervention:

i) to facilitate entry into farming, or
j) to help transfer small-farm assets intact (without taxes) between generations.

Users of Small-Farm Information

The probability that small-farm research will generate useful information can be increased if the research plans specify who the users will be and what the users' objectives are, relative to small-farm issues and problems. The new knowledge needed to help users achieve their small-farm objectives should then follow.

Sayre and Stovall addressed this when they pointed out the distinction between research clients who made use of research by USDA's Economic Research Service (ERS) and the research beneficiaries who ultimately benefitted from the research (74). 2/ Sayre and Stovall noted that over time the composition of the ERS clients had shifted away from private decisionmakers (farmers) to decisionmakers in the public sector. They surveyed their colleagues at ERS to determine how much the needs of different clients were considered in planning research, and found that the clients ranked in this order: (a) agencies within the U.S. Department of Agriculture, (b) the Office of

2/ ERS is the predecessor agency of the Economics, Statistics, and Cooperatives Services (ESCS).

the Secretary of Agriculture, (c) the Congress, and (d) the agribusiness complex. They found that the research beneficiaries were ranked in this order: (a) agribusiness complex, (b) farmers and land owners, (c) consumers, (d) agencies within the Department, and (e) the Congress.

In that vein, the major potential beneficiaries of new small-farm research should be the economically disadvantaged families on farms. Other beneficiaries may include rural residents who gain as the effects of improved incomes among low-income farm families ripple through the rural community. Consumers, as taxpayers, may gain if public policies and programs for small-farm families based on the new research are more cost-effective than current efforts.

The users (clients) and uses of new small-farm research are numerous and varied. Federal and State policymakers and program managers may use the new information to allocate public resources more effectively to achieve policy and program objectives. A better understanding of the circumstances and characteristics of small-farm families would help them avoid the creation of programs and policies with unexpected detrimental distributional impacts. Policymakers whose decisions affect small farmers include agents of the following: (a) the Agriculture Committee of the U.S. House of Representatives, (b) the Agriculture, Nutrition, and Forestry Committee of the U.S. Senate, (c) the Office of the Secretary of Agriculture, (d) agencies in the U.S. Department of Agriculture, including Federal and State staff in the Farmers Home Administration, (e) agencies in the Community Services Administration (CSA), (f) agencies in Action, (g) the Office of the Assistant Secretary for Planning and Evaluation, Income Security Policy, Department of Health and Human Services, and (h) agencies in the Department of Education.

Federal and State research and extension leaders may also use information on small farms to evaluate the reallocation of resources to small-farm programs from other uses and to increase the effectiveness of small-farm programs. Users of this sort include the Extension Committee on Organization and Policy (ECOP), the Cooperative Research unit in the Science and Education Administration, and research and Extension directors and selected faculty at land grant universities.

Program managers and leaders from a variety of institutions in rural areas also need information on small producers. Examples are small-farm and rural advocates, the formal or informal local structure that focuses on community development and growth, suppliers of such social services in rural areas as Food Stamps and Aid to Families with Dependent Children, and rural institutions such as churches, schools, agricultural credit, etc.

Finally, for making business decisions small-farm families and the suppliers of selected inputs and buyers of certain farm products are potential clients for the new small-farm information.

Goals, Problems and Well-Being of Small-Farm Families

To appropriately develop or evaluate alternative programs or policies for small-farm families, it is first necessary to define their problems. This requires accurately measuring the gap between their present circumstances and their goals and objectives. Although the present circumstances are matters of fact, the facts are often partially obscured, misunderstood, or completely unknown to interested observers. Often the conditions of small farmers are subject to conjecture and generalizations based on limited numbers of observations. Thus, a major component of small-farm family research is to objectively determine and disseminate facts about their present circumstances.

Defining small-farm problems also requires a clear understanding and specification of the desired goal, with careful consideration of whose goal is being considered. The many clients for small-farm research may hold a variety of goals for small-farm families, and some may be quite different from those held by the families. For example, the Federal poverty criteria are based on society's view of the minimum acceptable standard of living for any family in our system; that is, society's goal for very low-income families. However, it is important to consider the low-income family's goals for its members, which may be to achieve some higher level of income. This requires the determination of the family's goals and objectives and their motivation for living on a small-farm. Public support to assist disadvantaged farm people will be influenced by the degree of choice such persons have over their circumstances, i.e., their options and achievements of goals.

Some small-farm families may be trapped on the farm in desperate economic circumstances, meeting few of their goals but controlling too few human or physical resources to improve their situation. Other families may have selected farm life as best meeting their goals from among several alternatives that offered higher income levels and greater ability to purchase goods and services. To a partially informed observer, the families might appear similar in important characteristics but in fact be very different in both goals and their achievement.

The ability to purchase goods and services off the farm for consumption is an important part of well-being for all small-farm families. Another aspect of welfare is the consumption of goods produced on the farm such as horticultural food crops, animal products, and fuel. For some, well-being may be enhanced by consumption of some attributes of the farm environment such as spatial separation from neighbors, opportunities to pursue entrepreneurial or agricultural interests, or meaningful work and responsibilities for children. In other words, the rural environment may allow use of leisure time in ways important to some families.

Some components of well-being have been readily measured in the past, for example, current wage income as a gauge of the ability to purchase goods and services. Physical units of home-consumed farm products can be easily observed but appropriate valuation may be more difficult. Consumption of rural attributes of farm living is even more complicated to identify or measure, as is the use of leisure time in rural activities.

Specification and measurement of goals and values has been largely the domain of social scientists other than economists. Researchers concerned with the problems and characteristics of small farmers will need to consider all of the above, however, in evaluating the current situation, goals, and disadvantaged circumstances of small-farmers.

REVIEW OF SMALL-FARM RESEARCH AND ACTIVITIES

Although small-farm problems have not been a prominent issue in the American agricultural policy scene, their circumstances have not gone entirely unnoticed. The USDA and the Joint Economic Committee of the Congress (86) sponsored major studies in the early 1950's that identified full-time, low-production farmers (47), and low-income farmers (91) as being on the lower end of the distribution by gross farm sales. The farm and family characteristics identified with these groups of farm families included having few acres, a low capital-labor ratio, a low operating to fixed capital ratio, lacking skill as farm managers, being older or being very young, and having little or no formal education or skills useful in nonfarm employment. The policy recommendations from these studies were farm ownership and operating credit

tied to technical and managerial assistance, health and medical assistance, training for nonfarm employment and relocation assistance, local industrialization to supply full- and part-time nonfarm employment, and government purchase and consolidation of small-farms with sale back to the private sector.

The belief that urban poverty had its roots in rural poverty and that the national goal to obliterate poverty required action specifically designed for rural areas led to the creation of a National Advisory Commission on Rural Poverty in 1966. Research papers were prepared on the following topics: the rural poor and their communities, mobility and the migration of people, health status in rural areas, agriculture, and the economics of poverty (50). The Commission made numerous recomendations for action by branches of local, State, and Federal government and by private individuals and groups, encouraging them to (a) provide equal opportunity for rural citizens, (b) implement national policies to reach full employment, (c) change public assistance to reach rural areas (e.g., food stamps), (d) overhaul manpower and public employment policies to deal effectively with rural underemployment, (e) improve the rural education system and extend its coverage, (f) expand health manpower in rural areas, (g) expand family planning assistance for the rural poor, (h) expand public assistance for housing in rural areas, (i) create multicounty economic development units financed by all levels of government, (j) involve the poor in local community affairs, (k) examine commercial farm programs to evaluate the impact of costs on the poor, (l) enlarge small-farm operations through public programs, and (m) increase the effectiveness of all levels of government in program development and administration (51). Some of these suggestions from the 1950's and 1960's were implemented and may have been causal in the decline in rural and farm poverty noted since then, but rural and farm poverty has not been obliterated.

There has been increased small-farm activity in the decade of the 1970's, summarized in the remainder of this section and including (a) small-farm research agenda studies, (b) research and reports about small farms, (c) Extension education directed toward small-farm families, (d) activities of small-farm advocates, (e) legislation concerning small-farms, and (f) other small-farm initiatives in the USDA.

Small-Farm Research Agenda Studies

Several recent reports addressed the same topic as this paper--the research needed about small-farmers.

ESCS Small-Farms Workshop. In May 1978, the ESCS, USDA, sponsored a small-farms workshop involving researchers from both within and outside the Agency (94). The workshop was comprised of presentation and discussion of prepared papers, small group discussion and interaction, and the development of a bibliography of research relating to small-farms (30). It became evident during the workshop that the reference point for small-farm research should be the family, not the farm, and that goals and aspirations should be considered before delineating the problems on small farms.

The items on the research agenda developed at the ESCS workshop fell into three general categories, as follows:

a) the farm business as a production unit and generator of income,
b) the family as rural residents and a part of the rural community, and
c) the impact of agricultural and rural development policies and programs on small-farm families

The data needs for such research include: characteristics and resources of the farm business, characteristics of the farm families, goals of small-farm families, attributes of the rural communities in which they live, information on the degree to which human and physical resources were underutilized, and statistics that would allow

comparison of production efficiency of small versus larger farms.

North Central Regional Center for Rural Development. At the request of their Experiment Station Directors, the Center initiated a processs in 1978 that resulted in the identification of small-farm research priorities in that Region (55). Regional research and Extension faculty identified 64 research topics. These were collapsed into 33 topics in four broad areas, then later ranked by priority. Ten high priority items, twenty medium priority and three low priority items were delineated. The high priority items by broad areas were as follows:

a) Identifying the characteristics, number, needs, and nature of small-farms and farm families including household composition, education, capital assets, ownership patterns, and farm enterprise combinations. Questions regarding socioeconomic costs and benefits of small-farms were raised including impact of population decline on small communities and the farming sector, and the impact of large farms on natural resource use, long run food production, food costs, and the agribusiness sector.
b) Understanding small-farm quality of life including aspirations, noneconomic goals, differences between goals of small and large farms, satisfaction with occupation, and satisfaction with family life and living environment.
c) Assessment of existing research, education, and service organizations and programs on small-farms including the sources of information used by small farmers, and the issues of the impact of property taxes and Federal agricultural price policies on small-farms.
d) Development of technology appropriate for small-farms including appropriate machinery and buildings, use of machinery cooperatives and custom work, and alternative systems for crop and livestock production.

It was noted in the North Central Regional report that the data for a) and b) could be obtained from farm families, most of the information in c) would have to come from community institutions, and the data for d) probably would have to be obtained from agricultural production scientists or from reports of innovative procedures developed by small farmers.

National Rural Center Small Farms Project. The third small-farm research agenda study was conducted by the National Rural Center (40). Their small-farms project included two national workshops with invited participants from a wide range of research, administration, advocate and farm operator perspectives on small-farm issues and problems. The first workshop focused on the definition of small farms, and the second on research needs. Research papers were commissioned on selected topics (53). In an interim report and summary of the National Rural Center effort in 1979 (41), Madden and Tischbein reported the following concerns:

a) effect of agricultural resource ownership, control, distribution, and use on social and economic viability of rural communities (e.g., unemployment, alienation, housing, health care, economic base),
b) increased vulnerability to pests, weather, energy disruptions, soil erosion, depletion of organic matter, water pollution, and food contamination from monocultural agriculture and agricultural chemicals,
c) the threat to the nation's economic and political institutions by concentration in land ownership and concentration in the marketing system,
d) the declining quality of rural life and rural communities and lack of support for services, schools, churches, and rural institutions,
e) impoverishment of limited resource farm families and potential means of assistance such as improved farming practices, better market options, and increased off-farm earnings, and

f) human, social and ecological elments of economic efficiency.

They found deficiencies in completed small-farm research including the failure to differentiate among various types of small-farms (part-time, retirement, etc.), outdated research no longer valid for current technology or prices, research relevant to a limited geographic area only, and methodologically flawed research precluding generalization of results. According to their report, little is known regarding resource structure, constraints, income sources, and aspirations of small-farmers. Their illustrative research agenda enumerated the following topics: (a) impact on small-farms of Federal agricultural policies, (b) marketing channels for small farms, (c) education for small farmers, (d) importance of off-farm income, (e) technical production efficiency, and (f) causal factors that influence amounts and kinds of research and extension done on behalf of small-farms.

Regional Small-Farms Conferences. Four Regional Small Farms Conferences were sponsored by USDA, Community Service Administration, and Action in late summer 1978 (90). Eight small farmer delegates and spouses were selected from each State by a committee of USDA agency persons. Delegates were asked to identify problems by mail prior to the conference, and these were used as the starting point for discussion. The 410 delegates identified some 700 problems, which were sorted for duplication and similarity and consolidated to a much smaller number, and then were assigned priorities by delegates. The Conferences revealed that many delegates were unfamiliar with programs and assistance available to them, and that many of their problems were not unique to small farms, e.g. product price, input costs, credit, inflation, etc. Delegates indicated a feeling of lack of control over their future, mentioning government support of consumers versus farmers, rising costs caused by the activities of organized labor, escalation of land prices prompted by the actions of foreigners and other investors, and the use of food and agricultural imports as a foreign policy tool by the federal government. Their top rated problems were listed as income, credit, taxes, inflation, lack of political power, access to water (in the Southwest), FmHA lending procedures, impact of minimum wages and Food Stamps on hired labor costs, market outlets for specialty crops, and access to moderate scale machinery. They expressed the opinion that there was a positive relationship between the presence of a large number of small farms and the economic and social viability of community businesses and institutions.

A summary of small-farm research topics that emerged from the Conferences was prepared by Jerry West, as follows: (a) efficient combination of enterprises and use of resources on small-farms, (b) institutional procedures for obtaining inputs at lower cost, e.g., cooperative buying, machinery leasing, etc., (c) effects of labor laws and other governmental regulations on costs of production on small-farms, (d) competitive position of small-farms relative to commercial farmers and hobby farmers, (e) technology appropriate for use on small-farms, (f) strategies for small-farms to use in combating inflation and price instability, (g) relative feasibility of alternative types of markets such as direct marketing, roadside stands, cooperatives, etc., including financing alternatives, (h) effects of regulatory programs on markets accessible to small-farmers, e.g., direct sale of meat, (i) potential for use of futures and contract marketing on small-farms, (j) procedures for reducing input costs, (k) determination of costs and benefits of government assumption of risk in providing credit to small-farm operators, (l) credit for farm operators without previous agricultural experience and limited security, (m) determination of optimum length, flexibility in size of payment, and interest rate necessary to make repayment

of loans feasible, (n) demand for and supply of FmHA loan funds and the effects of alternative levels of lending activity, (o) effects of interest rate subsidies (in various programs) on farms of different sizes, (p) off-farm job opportunities consistent with seasonal agricultural employment and with skills of small-farm operators, (q) training needed to prepare small-farm operators or family members for off-farm work, (r) on-farm income producing activities, i.e. nonagricultural enterprises such as crafts, recreation, etc., (s) access to group life, health and accident insurance programs, (t) availability of social and recreational facilities for small-farm families, (u) financing for construction or improvement of housing, (v) procedures for conservation and recycling of resources, and alternative sources of energy for small-farms, including the use of "set-aside" land for production of energy materials, and (w) effects of alternative assessment procedures and tax policies on ability of various groups to purchase land--e.g., aliens, nonfarm corporations, wealthy nonfarm individuals, commercial farmers, and small farmers.

Farmers Home Administration Research Program. A Small-Farms Task Force was created by the Research Subcommittee of the USDA Rural Development Coordinating Committee in 1979 to consider and develop a research agenda for FmHA regarding their farm loan responsibilities. The Task Force, which was interagency, noted that FmHA had neither a formal research program to help farm loan program managers nor formal research links with SEA and ESCS, the primary research agencies in USDA.

The Task Force reviewed small-farm research and activities underway and developed a tentative research agenda for FmHA. The following items were reported: (a) description and typologies of current FmHA borrowers, (b) credit needs of small farmers and alternatives for meeting the needs, (c) the effects of technical assistance, off-farm income, and public transfers on small-farm family income, (d) analysis of changing FmHA loan and program criteria on geographic incidence, etc., of FmHA farm borrowers, (e) the effect of FmHA loan rates and terms on the farm business, (f) evaluation of the need for management assistance as an integral part of the FmHA loan program, and (g) the effect of FmHA funding delays on loan applicants.

Research and Extension Needs of Small Farmers. In another report, West indicated that small farms cannot be viewed as scaled-down versions of large farms, as they have limited resources, are more dependent on off-farm income, have greater difficulty using the new technology of production and marketing, and may have different objective functions (106). He indicated that in examining research and extension needs for small farmers there is a lack of agreement on societal goals for small farms. Thus, the delineation of problems, and determination of needs, may be inexact. He identified the following as macro-type small-farm issues:

a) What are the socioeconomic benefits and costs of small-farms?
b) What are the bases for economies of size (e.g., production, buying, or selling) and can small-farms overcome competitive disadvantages?
c) Are there alternative feasible organization and production systems (technologies) for small-farmers?
d) Are market outlets available for small farmers?
e) What are the costs and benefits of the government providing capital to low-equity, perhaps inexperienced farm entrants?
f) How do Federal and State policies regarding transportation, energy, land use, taxation, and price support programs affect small farmers, particularly regarding redistribution of income?
g) What are the impacts of rural development activities on small-farm families and how do small-farm families affect rural development?

West identified as micro-type issues the following:

a) What are the goals and objectives of families living on small-farms?
b) Why are small-farm families living on farms?
c) In what way can research and extension help improve the situations of small-farm families?
d) What alternatives will lead to reduced machinery investments per acre and increased gross sales per acre on small-farms?
e) What alternatives would be effective in reducing small-farm input costs and increasing product prices?

Research and Report About Small-Farm Families

The well-being of small-farm families has been a research issue of increasing importance within the USDA and land grant universities in recent years. West examined Current Research Information System reports and published research data from SEA/Cooperative Research for 1977 to determine publicly funded agricultural research effort (106). He found total State and Federal agricultural research to include 25,730 projects, 10,983 scientist years, and total funding of $1,004,086,000. Total social science and technology oriented small-farm research included 67 projects, 27 scientist years, and total funding of $1,556,000. Small-farm research claimed about two-tenths of one percent of the research resources in agriculture.

In another overview of small-farm research it was noted that while 26 States had data files on small-farms from noncensus sources, half were enterprise record keeping systems, and half were survey data. The latter tended to cover limited geographic areas within the State and in general were not useful in assembling a national picture of small-farm characteristics.

Description and Analyses of Small Farms. The research reported here and in the following two sections is included as a review of the issues, emphases, areas, and methods currently used in other small-farm research.

A chronic low-income farming area in Pennsylvania was studied by Fliegel in 1957. He obtained data from 189 sample farm operators and identified major subgroups among low-income farmers (24). He subdivided them as aged, physically handicapped, oriented primarily to nonfarm opportunities, oriented toward commercial agriculture, or oriented toward subsistence agriculture. The latter group was committed to a future in agriculture but showed little evidence of adaptability in their farming operation. Fliegel characterized such farmers as retaining certain traditional values focused on human relationships (e.g., friendliness and neighborliness) and not on commercial success.

The Economic Research Service, U.S. Department of Agriculture, prepared a series of reports on rural poverty in the late 1960's and early 1970's. Based on stratified samples and interviews with household heads, the findings were representative of the areas studied. The major criteria for the selection of geographic study areas were: prevalent and severe low-income problems, population density of poor persons, continuation over time of severe economic deprivation, limited income sources or employment opportunities, racial characteristics, and high rates of outmigration (45). The first areas studied were in the Mississippi Delta (16), the Coastal Plain of South Carolina (46), and the Ozarks.

Bird and McCoy noted in a 1967 report that rural whites were major victims of persistent poverty (5). Although most rural poor in the USA were white, they tended

to go unnoticed and command little public attention because they represented no particular constituency, were widely dispersed, generally lacked unity of purpose, and had no special identification with a social movement aimed at human rights. Johnson reported in 1969 that while most Indian Americans were in poverty and were the most rural of minority groups, they were mainly in nonfarm occupations (32).

Roy and Bordelon compared the urban poor with rural poor in Louisiana and observed the difficulty that small farmers have in obtaining credit (66). The potential solutions for small farmers might include shifts from field to truck crops, agricultural credit for the better farm managers, increased extension education directed toward low-income farmers, nonfarm vocational education and training for farm children, and training for nonfarm employment of some farmers.

Johnson and Hargroder interviewed 108 farmers in northeast Louisiana from a list of low-income commercial farmers prepared by Extension Service and Farmers Home Administration personnel (33). Analysis of the resource and credit data indicated that farm income could be expanded through more intensive use of tillable acres, adoption of different management practices, investment in certain machines, and increased use of credit. Farmers indicated that credit was available but they were reluctant to borrow.

The numbers and location of Wisconsin's farm poor were calculated using 1964 Census of Agriculture data (68) and reported from 1970 Census of Population data (69). Interviews with 1,000 rural households selected through a stratified geographic sampling process were the source of data for reporting differences between poor and nonpoor households in 1968 (72).

Marshall and Thompson (42) concluded that it is important to study small farmers because of questions of their economic viability and efficiency, the paradox of using capital- and energy-intensive and labor-saving technology in spite of the existence of labor surpluses and environmental concerns, and because of their diversity. Using the southern 13 states as the geographical area of interest, their research focused on the human resource development and quality of life aspects of farming, the need for changing institutions, and the social costs of the American agricultural system. They found the quantitative dimensions of the problem faced by small farmers to be blurred by definitional issues and lack of comparability among the major secondary data sources (i.e., Census of Population, Census of Agriculture, and the Special Reports and Current Population Surveys of the Census of Population).

Thompson and Hepp used Census and survey data to study farms with less than $20,000 gross sales in Michigan (83). The category included 85 percent of all Michigan farms. They were further classified as rural residents, owners of supplemental income farms, senior citizens, or full-time farmers. Commenting on the difficulty of escaping poverty without off-farm employment or increased transfers, the authors nonetheless noted the possibility of marginal increases in net cash income from the small-farm operation. They claimed that Extension educators and researchers could assist small-farm operators achieve income and other goals.

Woodworth, Comer, and Edwards interviewed a random sample of 344 farm operators in western and south-central Tennessee (111). They found it useful to separate farmers as operators of small farms, part-time farmers, retired farmers, and large farms. The basic differences found among these groups in characteristics, aspirations, and attitudes were cited as important in understanding agricultural potentials, the impact of agricultural programs, and the future structure of the agricultural sector in that area.

Orden et al. used 1974 Census of Agriculture data to identify the location by counties of farms with annual farm sales of less than $20,000, for the southern States, (58). Descriptive in nature, their reports recorded the resource, production, and socioeconomic characteristics of farms that were available from Census data.

Brinkman, Driver, and Blackburn surveyed 193 farmers with less than $25,000 gross sales in 1975 in two counties in Ontario (8). Data were obtained on demographic characteristics, attitudes, aspirations, farm resources, management ability, alternative employment opportunities, and physical disabilities. Farms were classified to reflect involvement and orientation toward farm and nonfarm employment based on days of nonfarm work, gross sales of farm products, and net losses in farm income. Economic and behavioral relationships that affect farm performance and acceptance and use of programs were studied (6), and the potential for farm improvement, the physical and financial needs of farmers and policies, and advisory services to help small farmers were evaluated (18).

An annual issue of the Current Population Reports series contains data for the nation on the number of persons and families below the poverty level. Disaggregation is based on farm and nonfarm categories by race or Spanish origin of head, head 65 years old or over, presence of wife, number of related children under 18 years and under 6 years of age, presence of other family members, and mean size of family and mean family income (102).

Comer and Woodworth (14) used a case study farm in south central Tennessee to illustrate the potential for increasing income. Budgeting and linear programming were used to develop alternative plans to the observed system. The analysis suggested that small farms may lack land or capital to fully employ the labor but that alternative crop or livestock enterprises may allow increased income within the available resource base.

Orden and Smith (57) used linear programming to calculate optimal farm plans for 93 small farms from two counties in Virginia. The models used the resource bases of the farms. Production activities for 12 farm enterprises were based on coefficients from the top 25 percent of the farmers surveyed and Extension cost and returns budgets. Compared to their optimal plans, potential returns were distributed among the 93 farmers as follows: (a) 16 percent earned greater income than their optimal plans (i.e., they were more economically efficient than the input-output coefficients used in the budgets), (b) 22 percent were foregoing less than $1,000 per year income, (c) 15 percent were foregoing from $1,000 to $2,000 dollars of income per year, (d) 18 percent were foregoing $2,000 to $3,000 per year, and (e) 29 percent were foregoing more than $3,000 per year. Reasons for the foregone income were low volume and lack of technical efficiency.

If the income of a farmer is unacceptably low in society's judgment, and nonfarm work is not a viable alternative, then the principal alternatives are permanent public transfers or increased farm earnings. The practical upper limit of farm earnings for a sample of small farms in Appalachian Kentucky was estimated through linear programming by Stewart, Hall, and Smith (80). They found that incomes could be increased substantially by selecting a more profitable enterprise or by improving technical management of existing levels of capital. While the authors acknowledged the difficulty of estimating the costs and benefits of an educational program to improve the incomes of small farms, their estimates suggested that even a modest level of achievement with such a program would be a very cost-effective antipoverty effort.

Small Farms and Rural Development. Small-farm families are consumers of goods and services purchased in rural communities and may purchase farm inputs there. They

produce agricultural products that bring revenue from outside the community, and as recipients of income transfers from outside the community, are an export base industry. Their economic well-being can be a factor in rural community growth and development. The reverse is also true; if employment opportunities are made available through rural development, small-farm families may be able to augment income by nonfarm work of head or spouse. These linkages have not been widely explored or developed (23), but a country report prepared for the Food and Agriculture Organization of the United Nations provides a historic overview and comments on the close relation among public policies, the farming sector, and rural development in the United States (34).

Heady indicated that the core of the rural development problem was the incidence of costs and benefits from technological change in agriculture and national economic growth (27). Adoption of new agricultural technologies resulted in (a) gains to larger, well-capitalized farmers, (b) losses to older farmers, (c) displacement of agricultural workers and small farmers, and (d) a decrease in the income and employment of small-town merchants and service workers as farm numbers declined. National economic growth averted nationwide depressions or high unemployment in recent decades, but the benefits were concentrated in urban centers. He concluded that to have the greatest pay-off, research in rural development should concentrate on those persons who have been most disadvantaged by technological changes and economic growth. The central challenge, according to Heady, is to identify the strata that has been most disadvantaged and then evaluate alternative means to alleviate low income, under-employment, and poor living conditions.

Heady and Sonka reported that the public sector invested $70 billion in direct and indirect programs to reduce the sacrifice made by the commercial agricultural sector during the structural change of recent decades but that little attention was given the nonfarm sector in rural areas (28). They studied what the impact on major rural nonfarm economic groups would be if the nation's agriculture were composed of farms of different sizes, using a national linear programming model with multipliers relating crop output to income in rural communities and industries. They concluded that a structure consisting of smaller (than typical) farms would lead to greater income generation in rural communities at a relatively modest increase in food costs to consumers. In a similar vein, Barkley (2) studied the effects of changes in agricultural technology on farm size as well as the effects on rural communities. His conclusions were consistent with the judgment of a multidisciplinary task force in California that felt greater community benefits resulted from family farms versus larger units (49). Clearly, some interested parties view small scale agriculture, such as the 160 acres given under the Homestead Act, as more compatible with the social and economic objectives of establishing or preserving communities, creating or saving jobs, and increasing or maintaining economic activity (55).

Tweeten (84) reported and discussed four approaches to nonmetropolitan development, as follows: (a) decentralization, or bringing jobs to the people, (b) outmigration, or taking people to the jobs, (c) using community resources for a more nearly optimal meeting of community objectives, and (d) public sector transfers to entities who have been losers in the development process. Public assistance to small farmers and low-income rural people would increase well-being and reduce outmigration. Transfers received from outside the community would have the same effect as an export base industry, i.e., they bring revenue into the community.

In his study, Larson viewed rural development as future oriented, with emphasis on certain goals or outcomes and with social modifications initiated to achieve these goals (38). Larson urged the retrieval and synthesis of already complete research, particularly on the following issues that relate to small-farm families: (a) alternative systems of rural health care delivery, including the effect of their spatial distribution on use, and the relation between mortality and sickness among people and access to health and medical care facilities, (b) the consequences of merging local subsystems (e.g., rural school or church consolidations) and the implications for other multiarea reorganization, (c) the importance of social association through neighborhood groups to encourage wider social integration of low-income rural people, (d) the role of voluntary associations as agents of change and the characteristics of most effective voluntary organization regarding rural change, (e) the ways the spatial dispersion of persons affect their well-being, (f) the importance of more equitable distribution of income, reduction of alienation, and preservation of cultural integrity and social diversity to rural decisionmakers and rural people, and (g) the urban-rural-farm differences in values that influence choice of development goals.

Welfare Programs and Small Farms. A third area of small-farm research and reports concerns how the unique circumstances of the rural poor affect the efficiency and equity of Federal income support programs. The largest numbers and most visible subgroups of the poor (a) are concentrated in urban areas, (b) are wage earners or unemployed, (c) live in female-headed families, (d) have few assets relative to income, and/or (e) belong to a racial minority. In contrast, small-farm families generally are spatially dispersed, are self-employed, are male-headed families, have large amounts of assets relative to income, and are not from a racial minority. The effects of these urban-rural differences usually are not acknowledged in evaluation of welfare reform proposals or programs. As a result, most public assistance programs are believed to serve the rural poor less adequately than the urban poor (52). There is evidence that rural areas have not obtained public employment funds in proportion to their share of total unemployment (43).

Combining observed data and economic theory, the impact on farm operators of welfare reform which would incorporate some type of a negative income tax was projected in a 1970 report (48). Alternative definitions of income, imputed returns to farm assets, and farm accounting practices were cited as issues. Changes in size and mix of farm production, in head and family labor input, in willingness to hold multiple jobs, and on migration were predicted under a universal guaranteed income (negative income tax).

Later, the Rural Income Maintenance Experiment was a social experiment to gain empirical insight into the effects of a guaranteed income (negative income tax) on many aspects of rural family activities and life (78). The 800 families studied in the 3 year experiment lived in two counties in Iowa and one in North Carolina, and included about 250 farm families. Besides labor response (59), farm and off-farm income (35), farm production and financial management (70), credit, health, nutrition, and mobility, many other responses were studied (3).

Other welfare reform proposals also have been analyzed with special attention to differential impacts on subgroups of the poor. A 1971 analysis of the proposed Family Assistance Plan showed that, compared with programs it would replace, eligibility would increase four-fold among rural residents and would include 18 percent of all farm operator families (29). More recent analyses were based on simulation models designed to estimate the potential benefits for a sample of households under the

the proposed transfer program. In one study it was estimated that of the total benefits from the refundable earned income credit, a provision of the Tax Reform Act of 1975, 34 percent would accrue to rural families and seven percent to farm families (10). Another analysis showed that the Allowance for Basic Living Expense welfare reform proposal of 1974 contained provisions which would increase benefits in rural areas compared with the existing programs (12). The 1977 Program for Better Jobs and Income was described and discussed in relation to low income farmers (71), and in a simulation model analysis was found by Pryor (60) to increase the percentage of rural persons who were eligible and to reduce rural poverty more than the current system. Her analysis was unable to incorporate work disincentives resulting from the proposal, however.

Extension Education for Small Farms

There are Extension programs for small, low-income farm families in 31 states with paraprofessionals used in 20 states (100). With two exceptions, all are small-scale demonstration programs. About $20 million in Federal financial support has been authorized by Congress for small-farm research and extension programs, of which $2 million was appropriated for Extension work with small farms. Thus most of the financial support for the Extension programs comes from sources within the states. New ESCS small-farm family research can be important to this education program in two ways. First, it may be possible to document the large numbers of economically disadvantage farm families who are not reached by current Extension programs and thus enhance the probability of increased funding (54). Second, the research may describe the location, farm and human resource bases, production levels and practices, nonfarm work, and attitudes of such families in ways useful in designing and implementing Extension programs.

Given this potential use for new research on small farms, it is useful to review the experience of prior small-farm education programs. Since its inception in the 1930's, the Tennessee Valley Authority has included this kind of an educational program for farmers in its purview. Local farmers were used to demonstrate new technology or use of farming inputs.

In 1954 a special grant of $7 million was made by Congress for more intensive on farm education for farm families in addition to the regular Federal Extension appropriation of $31.6 million. A national effort was initiated to intensify the agricultural extension process (63). States employed special agents to work individually with farmers to articulate goals, measure their farm resources and plan action to achieve those goals. Evaluations of differences among participators and controls were made by Johnson and Wilkening (31). These successful intensive on-farm education programs served as the models for educational programs for small farmers in the 1970's.

The national Extension Committee on Organization and Policy (ECOP) reported that in 1967 70 percent of the Nation's farms received gross income under $10,000. The resulting recommendations for effective extension educational programs for small farms (22) were reviewed by ECOP in 1976 (75).

Hall et al hypothesized that some combination of tehnical assistance and income transfers would be more efficient in increasing well-being of low income farmers than income transfers alone (26). They pointed out that large numbers of persons on small farms do not receive adequate nutrition, medical care, or education. Welfare and human development programs traditionally have been administered separately, yet

programs that increase productivity while maintaining income can do more per dollar to alleviate poverty than income maintenance alone. The authors surveyed and classified 102 farms in four counties in Appalachian Kentucky as predominantly mule powered or tractor powered, and then calculated optimal farm plans for both types using linear programming. They viewed the resulting plan as achievable by the farmers with technical assistance and little additional capital.

The belief that technical assistance can increase farm family income is implicit in all small farm Extension and technical assistance programs. Edwards reported that such small-farm programs in general had five areas of concentration: farm production, marketing, finance, human resource development, and public policies (19). Descriptions have been prepared of the programs in Missouri (108,13), Texas (81,1), Wisconsin (73), the southern states (57) and for other areas (34).

Evaluations of the costs and benefits of extension programs are difficult to make because it is hazardous to predict what changes the participating families would have made in the absence of the program. One proxy method is to compare progress by program participants and by nonparticipants who are as similar as possible in relevant characteristics. An evaluation of the Missouri Small Farm Extension Program was made by comparing changes made by selected participants and nonparticipants from 1971 to 1974 (107). The participants in the comparisons were selected from the 173 farm families in the program because they met the criteria of working off the farm less than 10 weeks per year and less than 20 hours per week. From the 1,428 nonparticipants who had been interviewed in 1971, 42 were found meeting the same off-farm work criteria and were used as the control group. All participants and controls were under age 60, had less than $10,000 sales of farm products in 1971 and expressed a desire to expand when interviewed in 1971. Compared with that control group, the participants had higher farm sales, net farm income, larger enterprises, and more livestock assets; they used more professional assistance; they had more stability in level of production; and had made more changes in housing. The author credited the differences to the educational program.

A feasibility study for an integrated small farm research-demonstration-extension program was authorized by the Congress in 1979 (89). The task force reported that the technologies applicable to specific small-farm problems have not been assembled into packages or systems that small farmers can adopt with confidence and limited risk. Small farmers lack the necessary resources to develop profitable combinations of practices, resources, etc. through trial and error. Also, there may be specific small-farm technologies that can be developed with an emphasis on biological and organic approaches to pest control and energy self-sufficiency. Use of family labor supply (child and spouse) in labor intensive farm enterprises, off-farm employment, and the labor use implications of contract farming should be explored. The task force recommended the development of a 600 acre Small Farm Research and Extension Center near Booneville, Arkansas to serve small-farm families in parts of a ten state southern area. The Booneville project would include optimum production systems research and related marketing research.

Small-Farm Advocates

Small-farm advocates bring enthusiasm and zeal to the small-farm arena as they attempt to cause changes beneficial to their audience. Advocates are usually articulate and often have connections in a network of like-minded individuals. Generally they understand how the government functions and while it is difficult to identify changes in public policies that are directly brought about by advocate activities,

they remain an important small-farm resource. Examination of their program and activities adds another perspective to the identification of small-farm issues, problems and research needs.

The diversity in small-farm definitions is most apparent among small-farm advocates. The problems they observe and the changes they seek to bring about call attention to their individual views of who are the "small farmers." Many speak to issues that are of only peripheral interest to others. Often advocates are concerned with only a single problem, solution or geographic area. Their diversity of views and efforts and the relatively small number of constituents for whom some of them speak, may be masked by their common use of the "small-farm" designation or title. Among the rural advocate organizations the National Rural Center (53) and Rural America (67) probably have gained the most national visibility and broadest base of support for activities on behalf of small farms. The former has drawn on the expertise and competence of numerous advocates, professionals, and small farmers from around the Nation in developing a working definition of small farm, identifying small-farm problems, and developing a small-farm research framework and agenda (41). The latter has attracted hundreds of rural advocates and coalitions from all parts of the country with a variety of interests to their annual workshops and conferences. Both are active organizations and direct in their work with legislators and agency managers.

Many other advocate or investigative groups have state or regional programs, focus on a single issue, or are engaged in awareness-raising activities that relate directly, or have relevance for, small-farm issues and problems. Some have multiperson staffs and offices in more than one location while others may depend largely on the efforts of a single individual. There are recurring linkages among some advocate groups including common mailing addresses or staff members and, more often, the joint sponsorship of meetings or workshops.

The Center for Rural Affairs in Walthill, Nebraska established a Small Farm Advocacy Project in 1978. It cosponsors a newsletter for exchanging information on legal and administrative issues affecting small and low-income farmers. The Center also conducts a small-farm energy project with financial support from the Community Services Administration. The project encourages on-farm experimentation and construction of solar energy devices and farm-scale machinery and processes for composting.

The Conference on Alternative State and Local Policies was begun in Washington in 1975 and works with state and local progressives through research, national and regional conferences, and publications. Its broad interests include tax reform, economic development, energy programs, and women's economic issues. Their agriculture project involves development of farm, land and food policies at the state and local level, including strengthening the family farm and supporting low-income farmers (15).

The National Family Farm Coalition of Washington, D.C. is working to support passage of family farm development act similar to that introduced in the U.S. House of Representatives in 1978. The bill would attempt to reorient agricultural policy to make it possible for small and moderate size farms to be operated successfully.

The Emergency Land Fund is a Georgia-based organization developed to assist black farmers acquire or retain farm land. The Agricultural Marketing Project in Nashville has encouraged small farms to produce horticultural food crops and market directly to consumers.

Reports and comments from some other rural advocates suggest that they are supportive of small-farm concerns while their major focus may be elsewhere, e.g. welfare of farm families, improvement of rural communities, etc. These include Rural American Women (Washington, D.C.), U.S. Farmers Association (Iowa), National Council on Agricultural Life and Labor Research Fund, Inc. (Delaware), National Catholic Rural Life Conference (Iowa), Interreligious Task Force on U.S. Food Policy (Washington, D.C.), Northeast Task Force for Food and Farm Policy (New York), and the Illinois South Project (Illinois).

Small-Farm Legislation

Federal and State legislation to help low income farm families is not new and was particularly extensive during the Depression years, but there has been renewed interest in the late seventies. In some cases, legislation was introduced and hearings held without enactment, but in others, new laws were made (88).

Hearings were held in six locations across the Nation in the fall of 1977 by the Subcommittee on Family Farms, Rural Development and Special Studies, Committee on Agriculture U.S. House of Representatives. Testimony and statements pertained to obstacles to strengthening the family farm system (87).

The proposed "Family Farms Development Act of 1978" (85) would have established a small-farms research program to include the following subjects: (a) increasing energy efficiency of existing farm equipment and technology, (b) developing new technologies for small farms that would be low cost, energy efficient, environmentally protective, soil and water conserving, using renewable energy resources and including livestock and crop production, (c) developing methods to improve nutrient levels in soil, reducing runoff of nutrients and water pollution, increasing information about humus in soil, and developing biological and integrated control of pests and weeds, including costs and returns, and (d) comparing conventional and ecological systems of agriculture for small family farms. A similar piece of legislation, the "Family Farm Entry Act," was also proposed in 1978.

The Congress enacted the Agricultural Credit Act of 1978 that in part revised the Farmers Home Administration (FmHA) farm loan activities by introducing a limited resource farmer loan program. Under the program, certain farmers who could not qualify for other FmHA farm loans became eligible for farm ownership loans at three percent interest for the first three years and five percent interest for the next two years. Maximum loan limits in this program were $200,000. In Fiscal Year 1979 $232 million of the $742 million approved for all FmHA farm ownership loans were allocated to the limited resource farmer program, for 3,079 loans.

Interest rates on other FmHA farm loans were simultaneously raised by the Act from about five percent to the cost of money level of about nine percent. Eligibility for the limited resource program (and three percent interest) thus became a critical issue for FmHA borrowers. The FmHA guidelines on this point indicated that few current borrowers could qualify for the limited resource loans, and those qualifying would be handicapped by such factors as limited education, low management skills, lack of land or capital, and poor production techniques (76).

At the state level these issues have also received attention. For example, the Minnesota Farm Security Program assists beginning, low income farmers by guaranteeing their farm real estate loans and by loaning the buyer money to cover his interest charges for the first ten years of the loan. The borrower must eventually repay all

the interest. To qualify, the borrower must have a net worth of less than $75,000, demonstrate adequate farming skills, and have a line of operating credit. About 140 farmers were assisted with these loans in the first 27 months of operation.

A 1979 North Dakota law exempts from State income tax the interest received by the seller of farmland to beginning, low income farmers. The land must be sold on a land contract of at least 15 years duration with interest charged at 6 percent or less. To qualify, the borrower must have a net worth of less than $50,000, demonstrate adequate farming skills, and receive more than half of his or her income from farming.

California commissioned a major study of small-farm issues that resulted in recommendations for legislation. In the California Small-Farm Viability Project's work on the state's small-farm issues (49), project members concluded that (a) the promotion of family farms would enrich California life economically and socially, and be a major means of creating more employment in rural areas, (b) low income rural people can elevate themselves to decent livelihood when provided the opportunity, and (c) that public policy can be used to either enhance or reduce the competitiveness of the family farm. The project's policy recommendations were for the State (a) to take an active role in maintaining the competitive position of family farmers and in facilitating farm entry, (b) to discourage concentration of economic control of agricultural resources and markets, (c) to encourage strong rural communities, and (d) to charter a nonprofit corporation to assist rural development activities, including the formation of family farms. Thus far, these recommendations have not been enacted into legislation.

Other Small-Farm Initiatives in the USDA

Selected small-farm research and Extension activities in the USDA have been reported in preceeding sections. Taken alone, they understate Department effort in this area, as there is much additional work supportive of small-farm interests through committees, task forces, or by individuals (100). Evidence of the supplemental activities may appear only in intra-Departmental correspondence and memos or be revealed through individual inquiry and conversation. These initiatives are summarized in approximate chronological sequence in the remainder of this section.

The USDA has many programs designed for farmers without consideration of size. Small-farm operators are eligible to explore and make use of relevant Extension educational activities, programs in the Agricultural Stabilization and Conservation Service (ASCS), Agricultural Marketing Service (AMS), Cooperatives unit of ESCS, Forest Service (FS), Rural Electrification Administration (REA), and Soil Conservation Service (SCS). In addition, two USDA agencies were established primarily to assist disadvantaged persons. The Farmers Home Administration (FmHA) provides real estate and farm operating loans for qualified farmers who are unable to obtain credit elsewhere. It has earmarked funds especially for loans to limited resource farms under the Agricultural Act of 1978, which provides for low-equity loans at very low interest rates. They also have a loan program for rural home purchase. The Food and Nutrition Service (FNS) conducts the Food Stamp Program for low-income households (farm and nonfarm), but participation rates by eligible farm and rural nonfarm families have trailed the national average.

The Rural Development Act of 1972 partially funded four Regional Centers for Rural Development, located at Cornell, Iowa State University, Oregon State University and Mississippi State University. The centers were created jointly by the Regional Directors of Extension and the Experiment Stations and each center has some small-farm

research underway (55,42,56). The Act also provided for research, extension and community service development on behalf of small farms, but annual expenditures were far below the authorized levels (34).

ESCS has three cooperative development field offices established in areas where there is unusual demand for assistance by cooperatives that are in the early stages of development. The oldest field office, which was established in 1969 in North Carolina, is working with a nonprofit development association. A field office in Alabama works with 80 farmers in a new vegetable and poultry marketing cooperative, and with three other cooperatives (109). In another project California migrant workers were helped to pool resources and obtain loans in 1974 and they now operate the Cooperative Central, a farm production cooperative. Extension and the university helped this project with agricultural technology and the ESCS Cooperatives Unit helped with financial planning and management.

The Economic Research Service initiated a major activity in 1976 to "identify emerging issues that might affect the direction and scope of ERS activities in the next decade" (74). Invited and contributed papers were prepared in eight areas, and nearly 100 persons participated in their preparation and review, from both within and outside the agency. Small-farm family well-being or rural poverty issues received minor attention. The most closely related topics were quality of life (with papers on health, transportation, community services and environment) and papers on economic opportunity that focused on energy and environmental restrictions.

In early 1978 an ESCS small-farm task force was established to develop a comprehensive and realistic research and program strategy. The Task Force sponsored a small-farm workshop in May, 1978 (94), which led to the initiation in 1979 of a major small-farm research effort by ESCS.

The USDA, Community Services Administration (CSA) and Action jointly convened five regional Small Farm Conferences in 1978 to identify and discuss farm problems as viewed by small-farm operators and spouses. Summary statements of these small farmer concerns were prepared in December 1978 (90). Action established a Rural Initiatives Task Force to develop recommendations for priorities for rural programming including low-income small-farm families. Community Services Administration (CSA) appointed a Rural Development Coordinator as the clearinghouse for rural development activities including limited-resource small farmers.

In August 1978, the Assistant Secretary for Rural Development, USDA, ordered State rural development committees to appoint small-farm task forces responsible for drawing up State action plans. The rural development coordinating committee, USDA, organized an interagency small-farms task force within the rural development research subcommittee. Their purpose was to help design a research agenda for FmHA. FmHA currently has joint research underway at Cornell with a sample of 6,200 FmHA borrowers. There is a FmHA supported project in Minnesota that places computer terminals in county FmHA offices to help improve the ability of county supervisors in using computerized financial analyses and planning procedures.

A small-farms issues coordinating committee was created in SEA in 1978, with members from Agricultural Research, Cooperative Research, and Extension units of the agency. The committee has reported on the status of small-farms research and extension activities in SEA (100) and meets to consider small farm issues and policies. The SEA small-farms committee has completed three projects, including a report on the present status of small-farm research and extension, an issues paper, and a summary statement from the USDA-CSA-Action small-farms conferences. The committee will continue to meet and prepare recommendations to SEA.

The Secretary of Agriculture's Memorandum 1969 of January 3, 1979 stated that "it is the policy of this Department to encourage, preserve and strengthen the small farm as a continuing component of American agriculture, ...to provide assistance which will enable small farmers and their families to expand the necessary skills for both farm and nonfarm employment to improve their quality of life, ...to encourage small farm operators to participate more fully in all USDA programs."

The Memorandum also established a policy committee on small-farm assistance which included several Assistant Secretaries and the Director of Economics, Policy Analysis and Budget. The Assistant Secretary for Rural Development served as chairman. The committee was charged to establish, provide policy guidance, and supervise a USDA working group comprised of representatives from the various agencies which will conduct small-farm activities for the Department (98). The duties of the working group included (a) serving as liaison between USDA and State and regional small farm committees and task forces, (b) reviewing state plans to assist small family farmers, (c) assisting states and regions in pilot projects that may be adopted in other areas, (d) facilitating coordination of small farm activities among USDA agencies at the headquarters level, and (e) recommending program changes that will better enable USDA to meet its commitment to small-farm families.

The working group initiated small-farm family assistance projects (SFAP) to encourage USDA agencies at the State level to use existing funds to help small and limited resource farmers (99). Proposals were received from 46 states and, in general, involved using ASCS, SCS, FS and State extension resources in programs to ensure access to USDA services and facilities for farm families not otherwise served. Ten SFAP projects were selected initially and announced by the Secretary of Agriculture on April 30, 1979, and six additional on June 21, 1979. The working group is also responsible for evaluating the SFAP projects. A "Small Farm Family Newsletter" was initiated by the USDA small-farm working group in April 1979 to facilitate communication among professionals working in the small-farm area (101).

SEA had $5 million appropriated for small-farm programs in fiscal year 1979 (100). The Agricultural Research unit in SEA received $3 million to develop and field test effective multi-cropping, low energy input systems making maximum use of organic residues, resistant varieties, and equipment suitable for small farms. The Cooperative Research unit in SEA received no funds earmarked for small-farm research, but 30 states had research projects on this issue. Since 1976, State extension units have had $2 million per year to support State staffing for small-farm Extension programs. The SEA goal was to alleviate the problem of small farmers not receiving adequate help through research, education, and action programs.

In the USDA there are two relatively new advisory groups. The Joint Council of Food and Agricultural Sciences has members from USDA, the land-grant universities, and State Extension faculties. The Users' Advisory Board is composed of users of USDA output. The USDA Joint Policy and Evaluation (JPE) group serves as staff to both groups. Their interest and views regarding small-farm issues and programs has bearing on future USDA initiatives in the area (96).

INFORMATION NEEDED ABOUT SMALL-FARM FAMILIES

The users of small-farm information may include Federal and State policy makers, program managers at all levels of government, community development authorities, rural institutions, social service agencies, educators, researchers, advocates, and small-farm families. The information can be used as a factual basis for assessing the

program needs of small-farm families, developing appropriate public policies, managing effective programs for small-farm families, or developing support for such programs and policies. The beneficiaries of this activity are persons in small-farm families, rural communities that gain from the improved economic well being of small-farm families, and the general public (taxpayers) if the well-informed programs and policies are more cost effective than what is replaced.

The information needed about small-farm families conceptually falls into the following clusters:

a) small-farm criteria and definitions,
b) goals and goal achievement,
c) problems and disadvantaged circumstances,
d) the human resources stock of small-farm families,
e) the farm resource stock of small-farm families,
f) available community and institutional resources, and
g) current use of resources to solve problems.

Each cluster of information is discussed in detail in the sections that immediately follow, and then secondary data sources are evaluated as sources of this information. The last section of the report then turns to a preliminary research plan for acquiring the needed small-farm information.

Small-Farm Criteria and Definitions

There are a number of widely used definitions that pertain to smaller farm units, including the USDA small-farm definition, the Congressional definition based only on gross farm sales, and the Federal inter-agency poverty income thresholds. In a small-farm survey, data should be obtained from respondents that will permit comparing a family with the criteria in those definitions.

Regardless of definition, the unit of interest must first be specified, e.g. "family," "household," "consuming unit," etc. For conveniences, the unit is referred to as "family" in this report.

For the USDA definition, the data needed are:

a) total family income by farm and nonfarm sources for the year of interest and for a "normal or usual" year,

b) labor and management input into the farm business by family members and others.

For the Congressional definition of small farms (i.e. gross sales of farm products of $20,000) additional information is required:

c) gross sales of farm products for the year of interest and for a "normal or usual year."

For the poverty income thresholds, two more items need to be added:

d) number of persons supported by the family income, and
e) age and sex of head

Goals and Goal Achievement

Problems arise when the goals of the farm family, or goals held by others for the farm family, are not achieved. Societal goals such as nonpoverty status, good health, and educational achievement tend to be objective and measureable, while the goals of the family tend to be less clearly defined or measurable.

Identification of family goals should reveal their:

a) reasons for being small-farmers,
b) employment and location preferences,
c) evaluations of themselves and their view of community acceptance, and
d) standards for financial achievement and economic well-being.

Societal goals for the farm family may include:

e) nonpoverty status,
f) access to alternative employment,
g) access to other lifestyles if desired,
h) good health,
i) educational achievement,
j) quality of housing, and
k) quality of life.

Problems and Disadvantaged Circumstances

Undesirable circumstances for small-farm families result if their goals or the societal goals identified in the preceeding section are not met. Problem areas may include:

a) vocational or location immobility,
b) lack of community acceptance,
c) self-denigration,
d) lack of financial achievement or security,
e) poor health or disability
f) substandard housing, or
g) lack of access to community services.

Human Resources

Human, farm and community resources can be used to solve problems and achieve goals. Small-farm research should measure the quantity and quality of resources available, i.e. the stock of resources including the following human resources:

a) educational achievement of head, spouse, and family members,
b) vocational training and work experience of all adult family members, and
c) health, disability, and alienation status of all family members.

Farm Resources

Farm resources can be used to generate income and to achieve a particular, rural lifestyle. They include:

a) crop land, pasture, woods and other land owned or controlled by rental,
b) value of land, buildings, livestock, machinery, and feed, crops and supply inventories,
c) debts on land or land contracts, machinery and livestock debts, short-run debts, open business accounts and unpaid farm bills are all claims against resources,
d) value of savings and checking accounts, cash value of life insurance, stocks and bonds, nonfarm businesses, and nonfarm investments, and
e) debts and loans against life insurance, on nonfarm businesses and investments, and consumer credit and unpaid bills.

Community and Institutional Resources

Families do not achieve their goals in isolation. They have community and institutional resources available for use. These may include:

a) agricultural credit sources,
b) farm input suppliers including custom machine operators and dealers in used or smaller machinery and equipment,
c) farm commodity markets,
d) availability of USDA services (e.g. FmHA, ASCS, SCS, Extension Service, and Forest Service) and Community Services Administration services,
e) nonfarm employment opportunities and access to nonfamily farm workers,
f) availability of vocational training programs,
g) medical, dental and health services, clinics, and hospitals,
h) public transportation system, and
i) active outreach programs or intake offices (or community rejection) of Food Stamps Social Security and Supplemental Security Income, Aid to Families With Dependent Children, Job Service, general relief, and social services.

It should be noted that discrimination against racial minorities, the rural poor, or small-farm families may interfere with resource use.

Using Resources to Solve Problems

Researchers and program managers need to know how effectively the resources available to the family are being used to achieve goals and solve problems. These "technical coefficients" will provide guides to the feasibility of proposed policies or programs. For example, knowing that some level of purchased inputs are used per acre of cropland to generate some level of gross sales of farm products would allow an experienced farm management specialist to judge whether or not additional purchased inputs could profitably generate additional net income. Regarding human resources, knowing that a farm wife, for example, works part-time for a certain wage indicates that this activity is viewed as feasible by the farm family. Similarly, failure to use food stamps, for example, by an eligible family identifies the nonuse of an institutional resource, such knowledge should be useful to program managers.

Information about the small-farm family's current use of human resources to achieve goals may include the following:

a) occupations, farm labor input, and nonfarm labor use by head, spouse, and adult family members,
b) current participation in educational or training programs by family members,
c) expenditures or current activities to improve health status,
d) attitudes of head and spouse about job mobility, geographic migration, use by self and others of public welfare and income tranfers, and investing in human capital, and
e) perceptions of head and spouse concerning their control of the future.

Technical coefficients showing the current use and efficiency of farm resources require the following kinds of information:

a) gross sales and value of home consumption by commodities,
b) markets used for selling farm commodities,
c) cash farm expenses by type, e.g. fertilizer, insurances, taxes, labor, etc.,
d) sources of purchased farm inputs,
e) construction, purchase or sale of farm capital items,
f) attitudes toward risk and expansion in the farm business,
g) sources and use of farm credit, and
h) knowledge of and the extent of the use of USDA services, e.g. FmHA, ASCS, SCS, Extension Service, and Forest Service.

The current use of community and institutional resources to achieve goals includes the following:

a) participation in community activities, e.g. church, school, farm organization, social or fraternal groups, visiting with friends or relatives, and
b) eligibility and participation in Food Stamp, Supplemental Security Income, and Aid to Families With Dependent Children programs.

Secondary Data Sources

If new data and analyses with information bearing on the major small-farm issues and concerns were available, secondary data sources would not be needed. This is not the case.

Many small-farm issues were included in the USDA and land-grant university research on small or low income farms cited earlier. These studies included both farm and family information from the same units. They are useful to small-farm researchers as examples of methodology and analysis, and for the empirical findings that relate to the specific geographic region and time period studied. However, the empirical results cannot validly be used to make statements beyond the region studied.

The Censuses, on the other hand, are national in scope and are either complete enumerations of the population, or normally deal with large samples. The Census of Agriculture contains a great deal of information about farms and agricultural resources and production and the Census of Population has extensive information about families. However, what has been lacking is a single source that contains information both about the farm and about the family on that farm.

This void will be partially filled by the January 1980 Bureau of the Census "Farm Finance Survey." In this survey, a sample of farmers that completed the "1978 Census of Agriculture" in early 1979 will be resurveyed for additional information about financial matters. Questions developed with researchers from the ESCS will be included that pertain not only to agricultural subjects but also to family characteristics, e.g. off-farm work of head and spouse, education, size of household, Federal program assistance, and acquisition of land. This survey is a significant move toward developing, in a single source, information about farm families and their farms for a national sample.

Comparison between the Farm Finance Survey, Census of Agriculture, and the Censuses' "Current Population Survey" may be made using table 1. Gaps between the information needed about small-farm families and that provided by the three sources are indicated by "no," and by "partial" where the information available is viewed as partially meeting the need.

The Farm Finance Survey will be a very useful source of data about small farms and small-farm families. But it was not intended to investigate areas such as goals, values and attitudes of small farmers, to measure human resource levels or disadvantaged circumstances, to study the resources provided by the community, or to study farm family participation in the community. Data on those issues remain to be acquired through other means.

Table 1. Information Needed About Small-Farm Families Compared With Information Available from the Censuses.

Information Needed About Small-Farm Families	Census Farm Finance Survey (With ESCS Questions) 1980	Census of Agriculture 1978	Census Current Population Survey 1978
SMALL-FARM CRITERIA AND DEFINITIONS:			
Gross farm sales (Congressional) definition	Yes	Yes	No
USDA definition	Yes	No	No
Poverty level income definition	Yes	No	Yes
GOALS AND GOAL ACHIEVEMENT:			
Goals of farm families	No	No	No
Achievement of goals	No	No	No
PROBLEMS AND DISADVANTAGED CIRCUMSTANCES:			
Vocational and location immobility	No	No	partial
Community acceptance, self-denigration	No	No	No
Financial achievement and security	partial	partial	partial
Housing quality	No	No	partial
Access to community services	No	No	partial
HUMAN RESOURCES:			
Education of head, spouse, family	Yes	No	Yes
Vocational training and work experience of adults	partial	No	partial
Health disability and alienation status of family members	No	No	partial
Age, sex, and race of head	Yes	Yes	Yes
FARM RESOURCES:			
Land tenure and use	Yes	Yes	No
Farm asssets and debts	Yes	partial	No
Nonfarm assets and debts	partial	No	No

Continued

Table 1. Information Needed About Small-Farm Families Compared With Information Available from the Censuses--Continued.

Information Needed About Small-Farm Families	Census Farm Finance Survey (with ESCS Questions) 1980	Census of Agriculture 1978	Census Current Population Survey 1978
Agricultural credit	partial	No	No
Farm input and product markets	No	No	No
Custom farm machine work	Yes	Yes	No
USDA services (FmHA, ASCS, SCS, Extension, FS)	partial	No	No
Nonfarm employment opportunities	partial	No	partial
Vocational training programs	partial	No	partial
Medical, dental and health services	No	No	No
Outreach programs (or community rejection of) Food Stamps, SSI, AFDC, Job Service, general relief, social services	partial	No	partial
Public transportation services	No	No	No
Racial, farmer or low-income discrimination	No	No	No
USING HUMAN RESOURCES TO SOLVE PROBLEMS:			
Occupations, farm labor input, and nonfarm labor use by head, spouse, and adult family members	Yes	partial	partial
Current participation in educational or training programs by family members	No	No	No
Expenditures or current activities to improve health status	No	No	No
Attitudes of head and spouse about job mobility, geographic migration, use by self and others of public welfare and income transfers, and investing in human capital	No	No	No
Perceptions of head and spouse concerning their control of the future	No	No	No
Gross sales and value of home consumption by commodities	Yes	partial	No

Continued

Table 1. Information Needed About Small-Farm Families Compared With Information Available from the Censuses--Continued.

Information Needed About Small-Farm Families	Census Farm Finance Survey (with ESCS Questions) 1980	Census of Agriculture 1978	Census Current Population Survey 1978
USING FARM RESOURCES TO SOLVE PROBLEMS:			
Markets used for selling farm commodities	No	No	No
Cash farm expenses by type	Yes	Yes	No
Sources of purchased farm inputs	No	No	No
Sales and purchases of farm capital items	Yes	No	No
Attitudes toward risk and expansion in the farm business	No	No	No
Sources and use of farm credit	Yes	No	No
USING COMMUNITY RESOURCES TO SOLVE PROBLEMS:			
Knowledge of and the extent of the use of USDA services, e.g. FmHA, ASCS, SCS, Extension Service, and Forest Service	Yes	No	No
Participation in community activities, e.g. church, school, farm organizations, social or fraternal groups, visiting with friends or relatives	No	No	No
Eligibility and participation in Food Stamps, Supplemental Security Income, and Aid to Families with Dependent Children Programs	partial	No	partial

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